A survey to investigate the status and distribution of the Black-cheeked Lovebird *Agapornis nigrigenis* in south-west Zambia

Tim Dodman

We were, by all accounts, an unusual team. I, by virtue of getting everyone together, was leader and therefore assigned strategic decisions, such as how much curry powder to add to the kapenta (cardboard fish). Vincent Katanekwa, Acting Director of Livingstone Museum, shunned a mountain of paperwork to disappear into the bush, bringing with him Aaron Muchindu (Ornithological Research Assistant) and a vehicle. Vincent possessed the unusual skill of being able to turn dried kapenta into a delicacy, whilst Aaron beat the nshima (maize meal) like a skilled oarsman paddling through mud. Joseph Bowa, National Parks and Wildlife Service (NPWS) Biologist, watched such proceedings from the veranda of his 15-man collapsible palace; and Bob Stjernstedt, master of Zambian bird noise and broken Tanganyika jacks, informed us, whilst crudely chopping bulbs of garlic, of the respective merits of being bitten by different life stages of tsetse fly. Dylan Aspinwall, Chairman of the Zambian Ornithological Society (ZOS), also provided an able assistant - Shati Sakala, the necessary wheels, and about seven different pickles to accompany a cold nshima breakfast. Mwape Sichilongo, Executive Director of the Wildlife Conservation Society of Zambia (WCSZ) left us on the infamous Mulobezi Sawmills train, which miraculously failed to derail. Teamwork is all important when you spend a couple of months together in the bush. Although team numbers and personnel fluctuated somewhat during the survey the aim remained the same: to crack the Great *Agapornis* Mystery in south-west Zambia.

The Black-cheeked Lovebird *Agapornis nigrigenis* is an endangered species and Africa's most localised parrot. It is a beautiful bird, with dark brown head contrasting with bright red beak and comical white eye ring. It is sometimes considered conspecific with Lilian's Lovebird *A. lilianae*, which occurs further east. The two species are separated by a block of unsuitable miombo *Brachystegia* woodland along the Zambezi Escarpment. Both inhabit mopane *Colophospermum mopane* woodland, which is characteristic of low-lying valleys of southern Africa. Mature mopane trees provide roosting and breeding holes for lovebirds, and actively suppress perennial grasses, thus allowing annuals to proliferate. These produce large quantities of seeds which are an important component of the lovebird's diet. The core distribution of Black-cheeked Lovebirds is a disjointed belt of mopane woodland on alluvial soils of lacustrine origin, formed by the drainage of an ancient lake due to the downfaulting of the Zambezi trough (M Bingham, unpublished). Although the total area of mopane in south-west Zambia is around 5,500 km², the actual core distribution of *A. nigrigenis* is approximately 2,500 km²

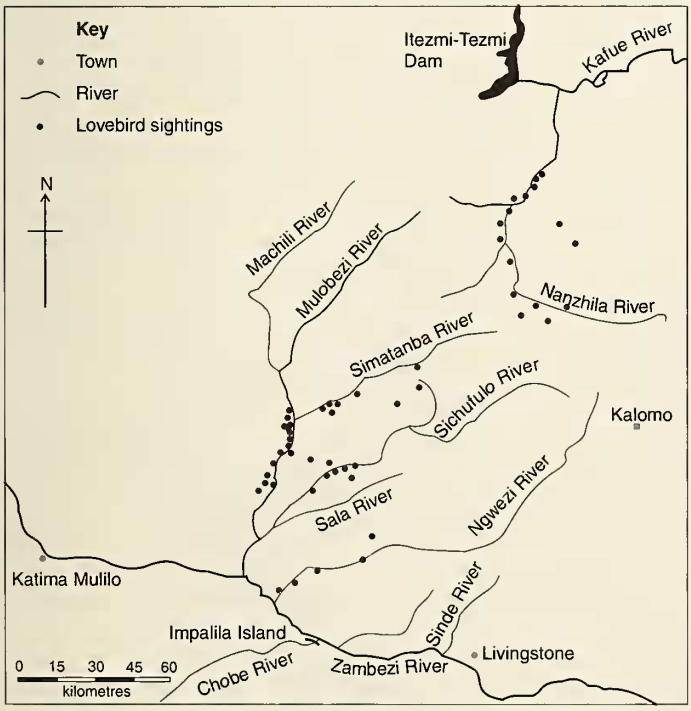

Figure 1 Black-cheeked Lovebird *Agapornis nigrigenis* sightings, October/November 1994
Figure 1 Observations d'Inséparable à joues noires Agapornis nigrigenis, *octobre/novembre 1994*

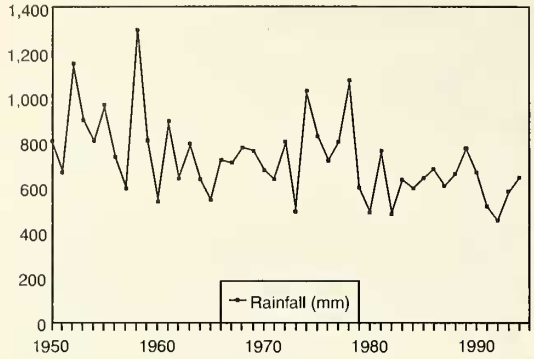

Figure 2 Total annual rainfall in south-west Zambia, 1949/50-1993/94
Figure 2 Pluviométrie annuelle totale dans le sud-ouest de la Zambie, de 1949/50 à 1993/94

(Figure 1). Much of the mopane appeared quite devoid of lovebirds, which were usually found within reasonable reach of a reliable water source.

The first lovebirds we saw came to drink at a small pool on the Ngwezi River. Like many seasonal rivers, the Ngwezi is reduced to a series of pools in the dry season. However, there has been a definite decrease in dry season availability of water in the last few decades, mirrored by the pattern of decreasing rainfall (Figure 2). Earlier this century the Ngwezi used to flow all year round according to older villagers. Now people have to dig wells in the riverbed to obtain water in the dry season. A similar pattern has affected other rivers. The majority of lovebird sightings during the rest of the survey were around water sources, especially at riverbeds. Like people, lovebirds need a regular, probably daily, supply of water. *A. nigrigenis* used to occur more widely, with reliable past records from the Bovu and Sinde catchments and mopane woodland east of Livingstone. Although serious trading activities have occurred in the past, it is dry season desiccation due to climatic change that has had a more lasting impact on its status and distribution.

The Black-cheeked Lovebird was a common target for trapping earlier this century. Older villagers remembered the trade well, which offered a welcome income for a bird widely regarded as a pest of sorghum and millet crops. The Mulobezi Sawmills railway was an important route for the trade, and the 16,000 trapped in four weeks in 1929 reported by Moreau[2] are a good indication of its scale. Several villagers reported that the train drivers themselves were the main buyers, whilst others remembered a white hunter who paid for cages of birds to be carried 200 km to Kalomo. Nowadays, trapping is only really carried out for local consumption, mostly in opportunistic non-specific wire or hair snares set around water sources and grain heaps.

Interviewing villagers on the Black-cheeked Lovebird survey, south-west Zambia, November 1994 (Tim Dodman)
Entretien avec les villageois dans l'enquete sur l'Inséparable à joues noires, sud-ouest de Zambie, novembre 1994 (Tim Dodman)

Over 350 interviews were conducted, and formed an important part of the survey. Most results were reliable, though there were exceptions, notably when the whole village of Bombwe appeared completely drunk, yet insistent on offering a series of garbled opinions. Many older people gave intriguing accounts from the 1920s and 1930s, often with astonishing consistency, such as the price of 1 shilling and 6 pence (old UK currency) they received for selling one lovebird. Headman Magumwi, whose area supported the highest lovebird population density, reported that lovebird numbers were much lower now than in the past, attributing their decline to the wide reduction in sorghum and millet in favour of maize, especially in the 1950s. He told of raised platforms in grain fields where people would be stationed to set off bells in parts of the field where crop-raiding birds were present, by pulling on long strips of connected sticks.

As we moved through the survey area, we quickly became adept at recognising prime lovebird habitat. The most profitable method for getting an idea of population size was by conducting early morning pool watches, when all lovebird arrivals and departures at pools were recorded between 05.30 hrs and 07.00 hrs, with their associated directions. In this way, a good picture was obtained of relative population density in the area and the distribution of roost or breeding sites. Altogether 2,127 Black-cheeked Lovebirds were recorded in two months, with an estimated total population of 10,000. There appeared to be two dry season sub-populations, the southern (6,200) and the northern (3,800). All lovebird sightings were in or

near mopane woodland (Figure 3). A wider but unconfirmed distribution was established through interviews and habitat observations for the main crop-ripening period, especially between February and June. During this period it was clear that lovebirds spread out to exploit the ready food supply of ripening sorghum and millet. This probably took them into the Caprivi region of Namibia, most likely at Impalila Island (at the confluence of the Zambezi and Chobe Rivers) and east of Katima Mulilo.

In all, 397 bird species were recorded during the survey, producing 432 new atlas records for the Zambian Bird Atlas project (D R Aspinwall, in prep). Other threatened species recorded were Wattled Crane *Bugeranus carunculatus*, found in pairs or threes at relatively undisturbed dambos (vleis) and Lesser Kestrel *Falco naumanni*. The first rains produced a variety of migrants in good numbers, especially raptors, eg over 400 Black (Yellow-billed) Kite *Milvus migrans parasitus* and over 100 each of Lesser Spotted *Aquila pomarina* and Steppe Eagle *A. nipalensis*. Over 700 Marabou Stork *Leptoptilus crumeniferus* were attracted to dwindling pools, where fish and frogs concentrated. Thirteen species of cuckoo were recorded, including Thick-billed *Pachycoccyx audeberti*. Pel's Fishing Owl *Scotopelia peli* was found at quite isolated pools of the Nanzhila and Sichifulo Rivers. Baikiaea forest and deciduous thickets produced additional species such as Crested Guineafowl *Guttera pucherani*. The ridiculously proportioned Bat-like Spinetail *Neafrapus boehmi* was fairly widespread,

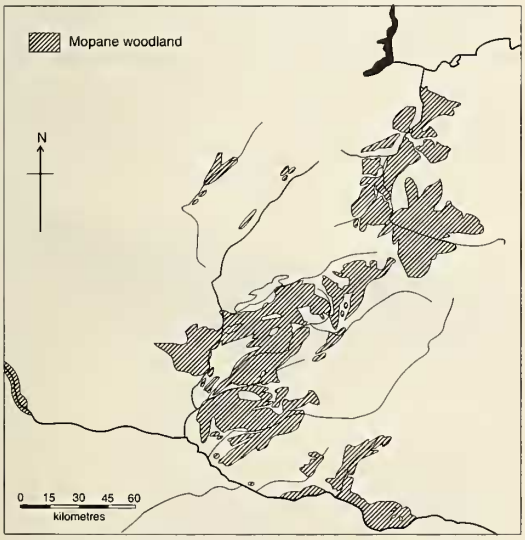

Figure 3 Distribution of mopane woodland in south-west Zambia
Figure 3 Distribution de la forêt claire de mopane dans le sud-ouest de la Zambie

Brachystegia woodland at the end of the dry season, Machile River, south-west Zambia, October 1994 (Tim Dodman)
Fôret claire de Brachystegia à la fin de la saison sêche, Fleuve de Machile, sud-ouest de Zambie, octobre 1994 (Tim Dodman)

though the larger Mottled Spinetail *Telacanthura ussheri* was only recorded once.

Mopane woodland does not support a diverse avifauna, and other habitats in south-west Zambia are better represented elsewhere, so any Important Bird Area should be defined specifically for the Black-cheeked Lovebird, and a full species list produced for the site. An IBA centred around the mid Machili, Sichifulo and lower Simatanga Rivers (Figure 2) could contain over half the dry season population.

This survey was enormous fun and a great success, especially in the close collaboration fostered between participating organisations. This in-country approach to survey work can be efficient and extremely cost-effective and is an excellent way to encourage active national enthusiasm in (bird) conservation. It is hoped that further joint ventures will take place.

Acknowledgements

This survey was funded by the Royal Society for the Protection of Birds as part of BirdLife International's IBA-Africa Programme. Participating organisations in Zambia were National Museums, NPWS, WCSZ and ZOS. Thanks to all survey participants, especially Dylan Aspinwall for advice and follow-up. Henry Mwima issued free National Park permits. The maps were prepared by Jennifer Foley.

References

1. Collar, N.J., Crosby, M.J. and Stattersfield, A.J. 1994. *Birds to Watch 2: the world list of threatened birds*. Cambridge: BirdLife International.
2. Moreau, R.E. 1948. Aspects of evolution in the parrot genus *Agapornis*. *Ibis* 90: 206-239.

IWRB, Slimbridge, Gloucester GL2 7BX, UK.